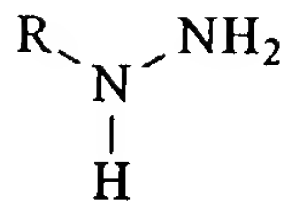
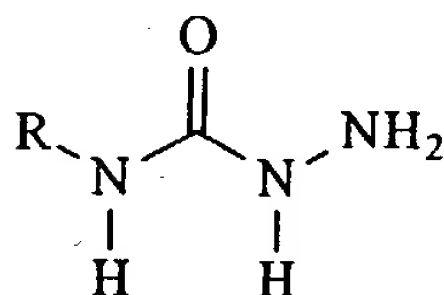


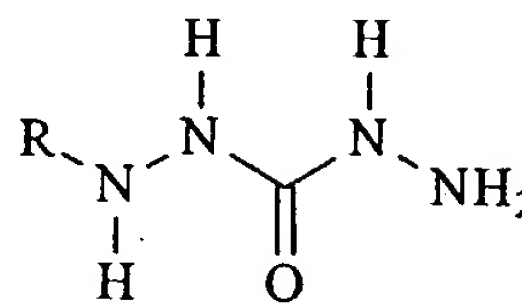
FIGURE 1



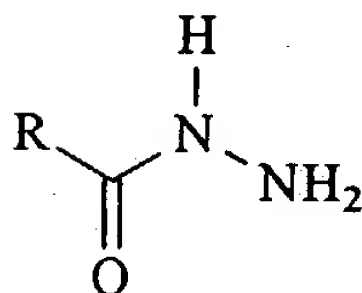
hydrazine



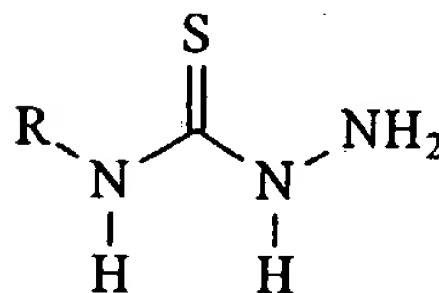
semicarbazide



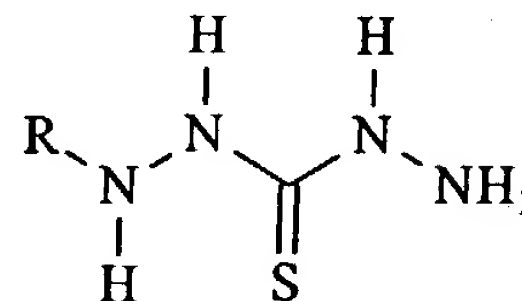
carbazide



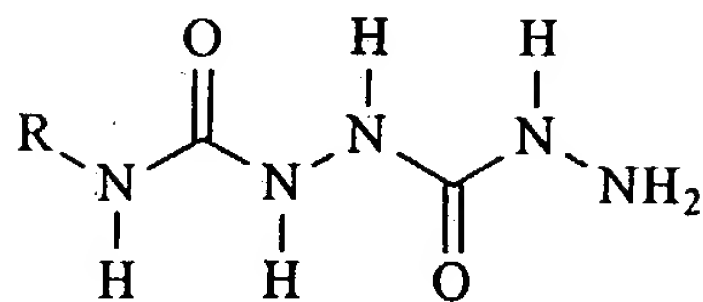
hydrazide



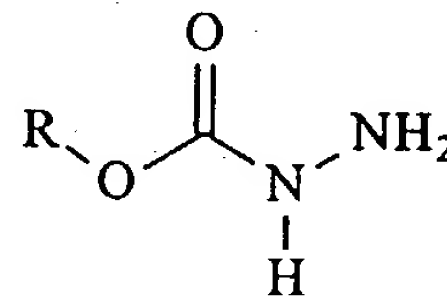
thiosemicarbazide



thiocarbazide



carbonic acid dihydrazine



hydrazine carboxylate

FIGURE 2

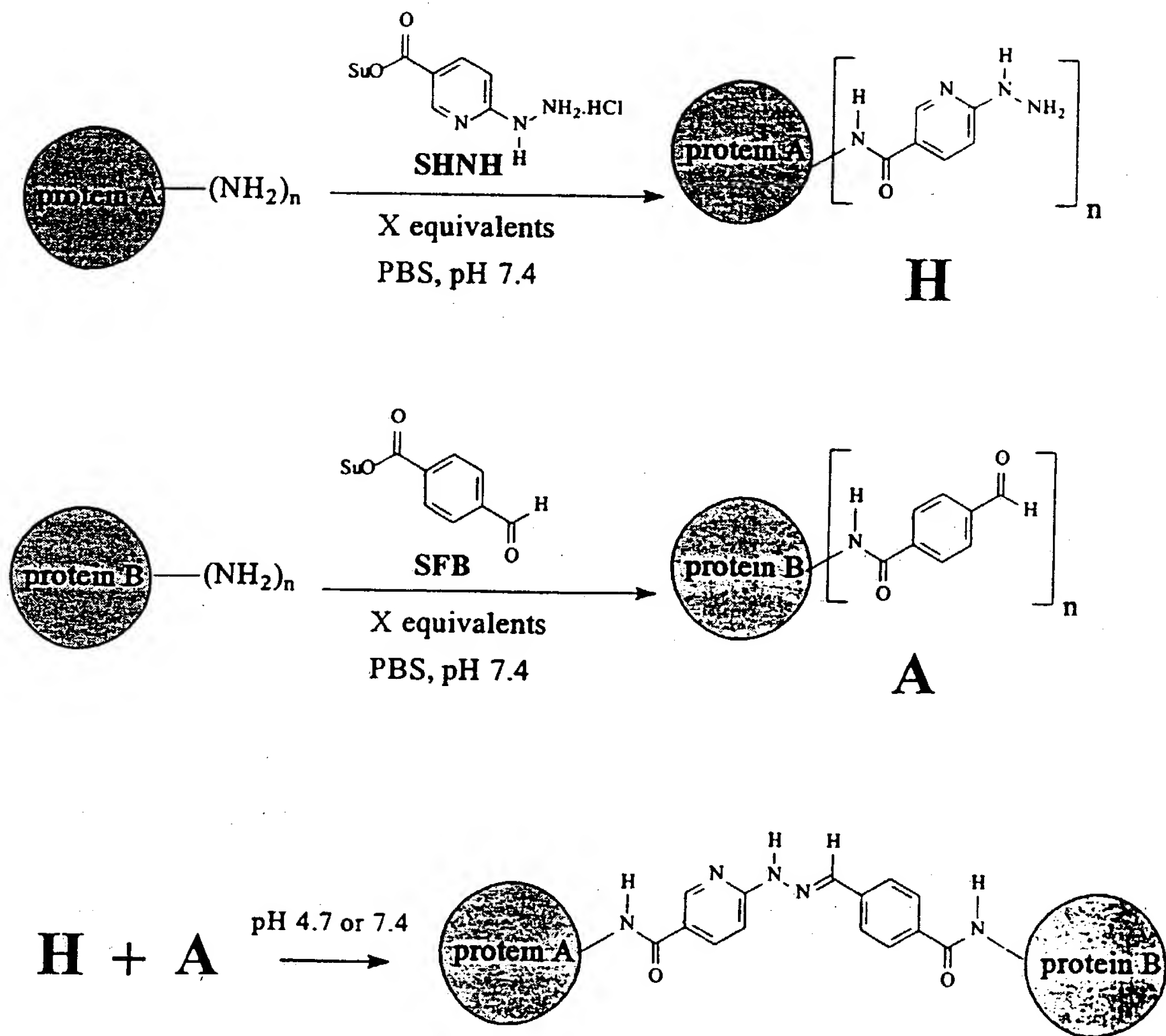


FIGURE 3

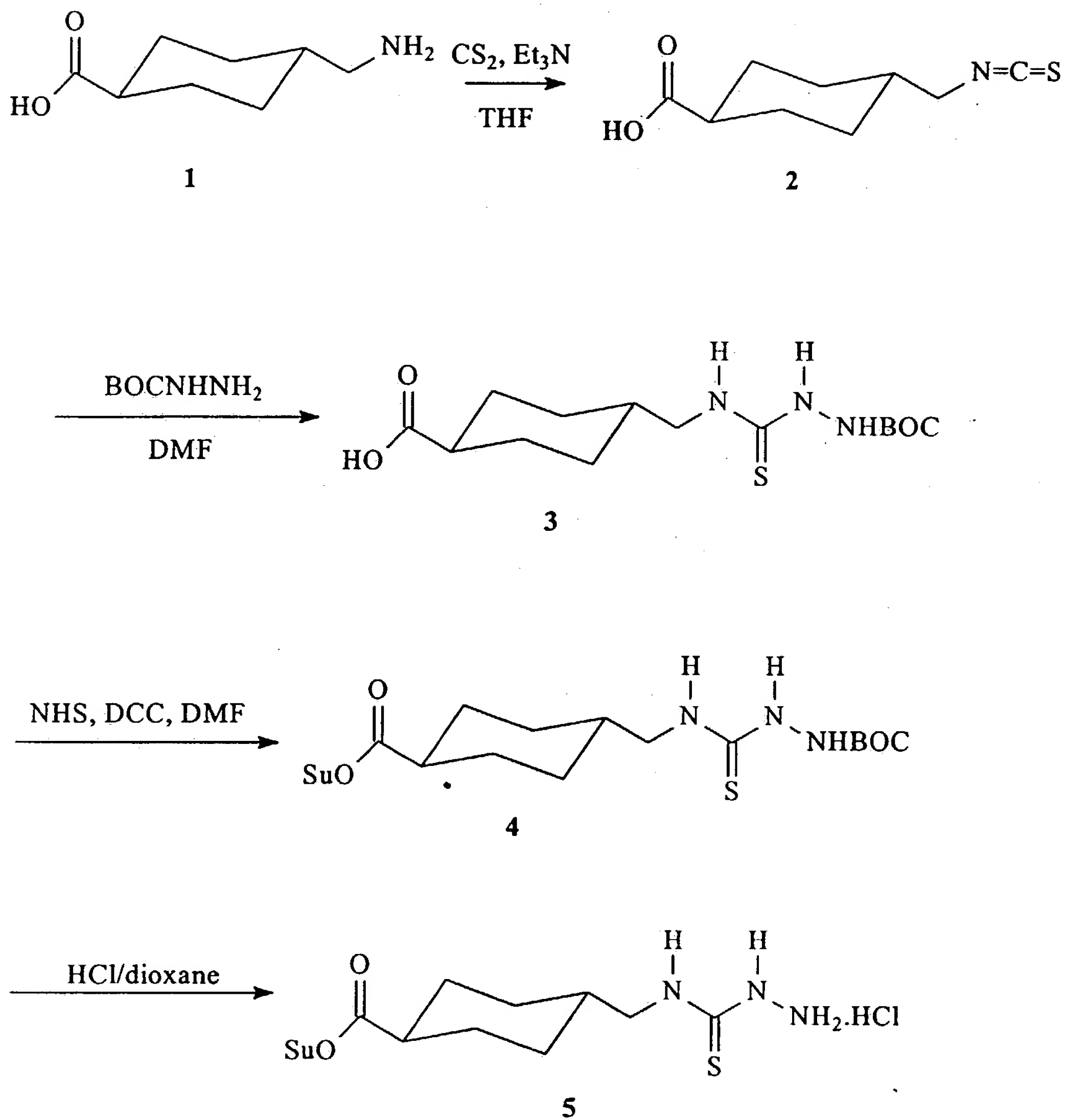


FIGURE 4

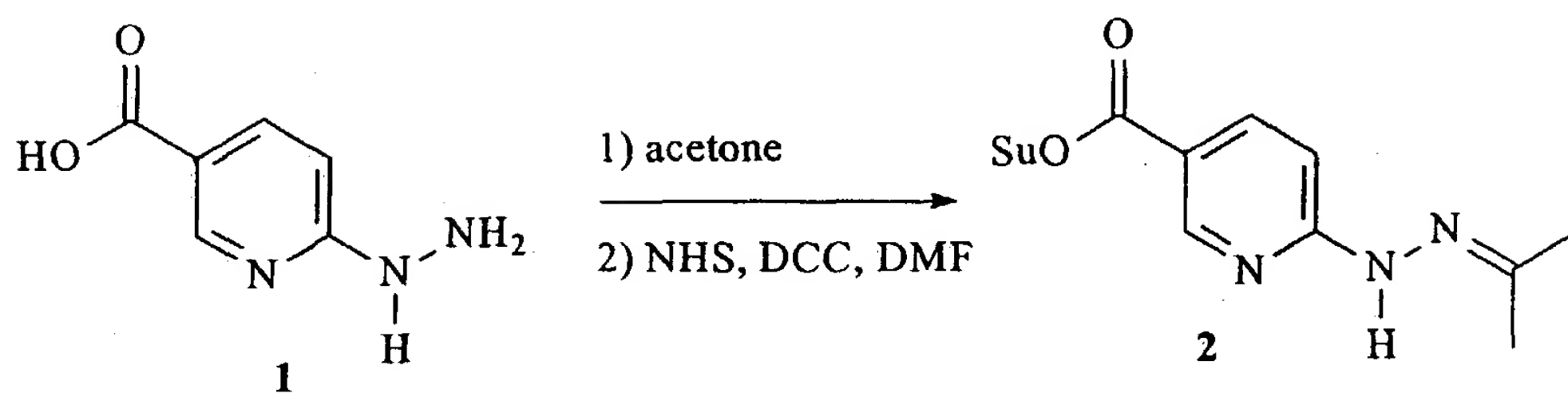
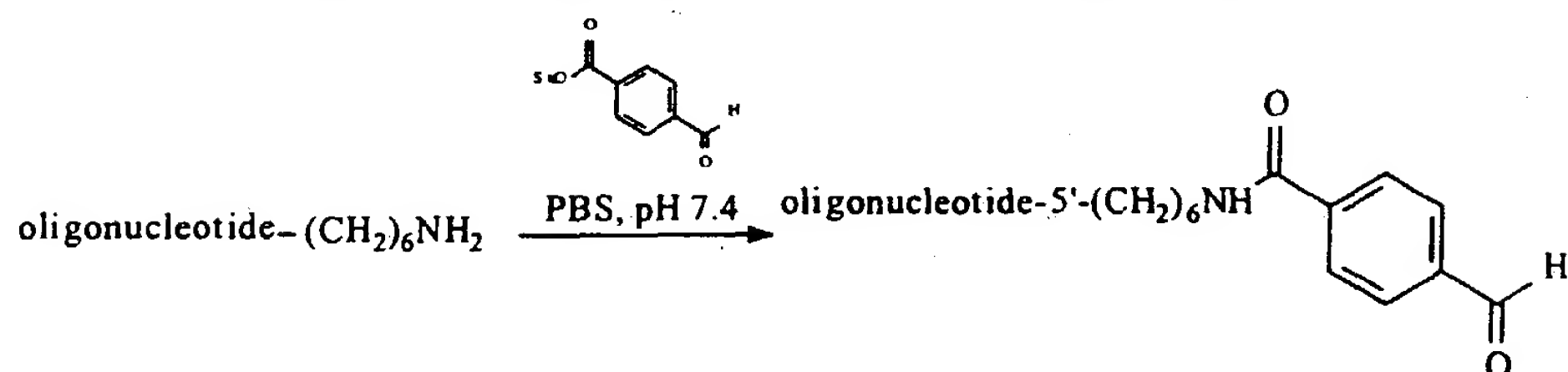
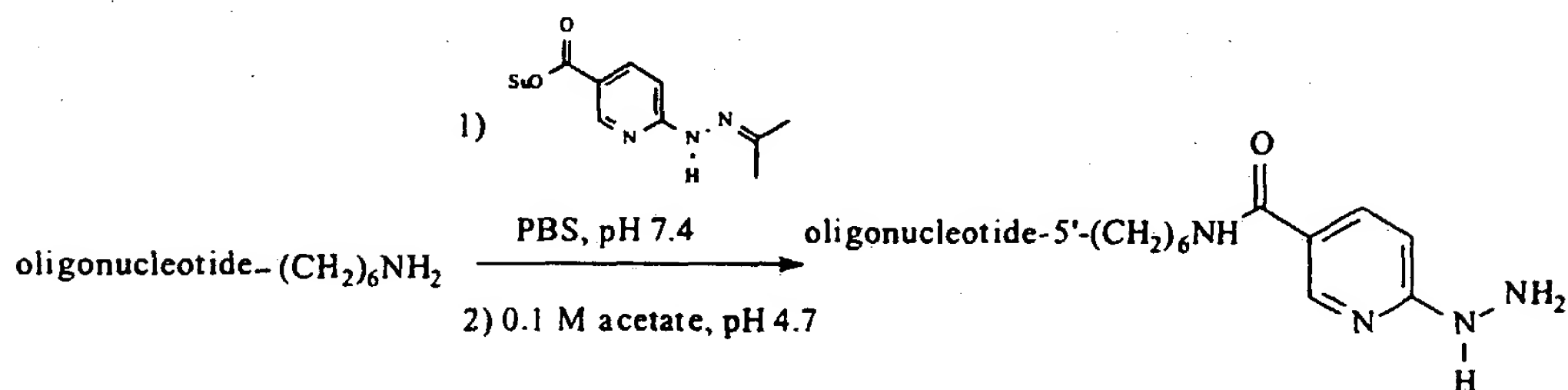


FIGURE 5

Preparation of 5'-aromatic aldehyde-modified oligonucleotide:



Preparation of 5'-heteroaromatic hydrazine-modified oligonucleotide:



Conjugation of hydrazino-modified oligonucleotide to aldehyde-modified oligonucleotide

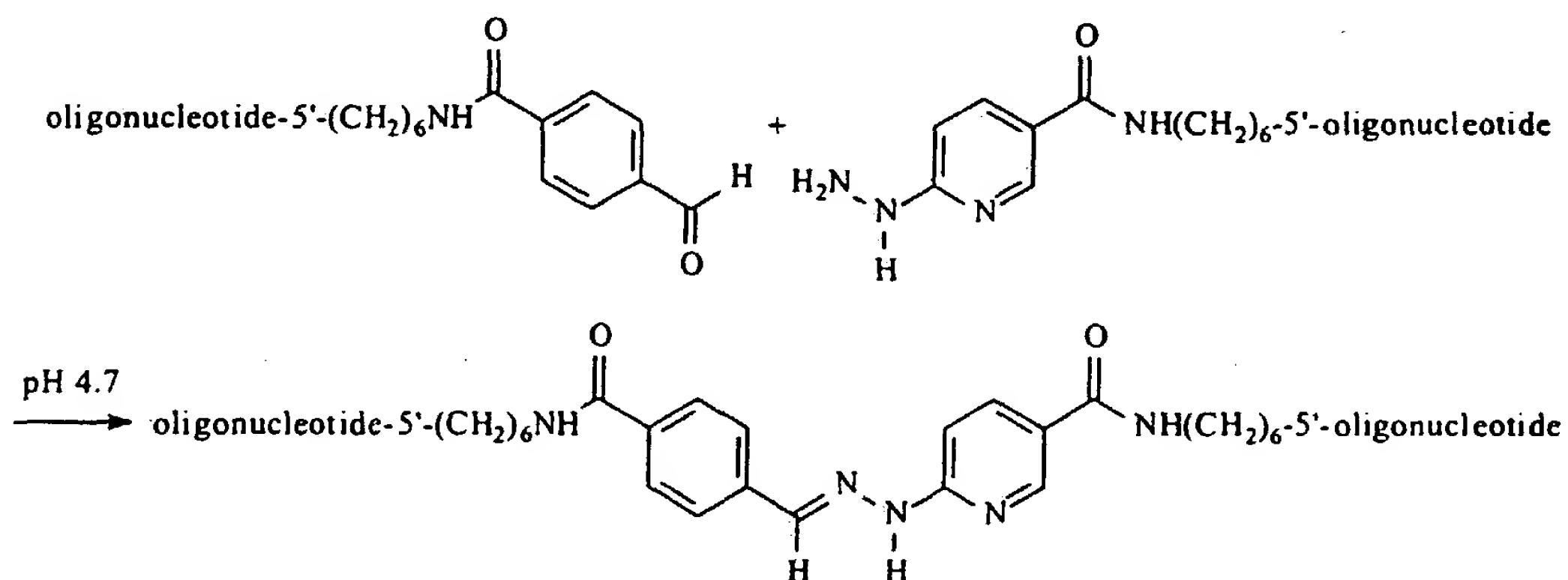


FIGURE 6

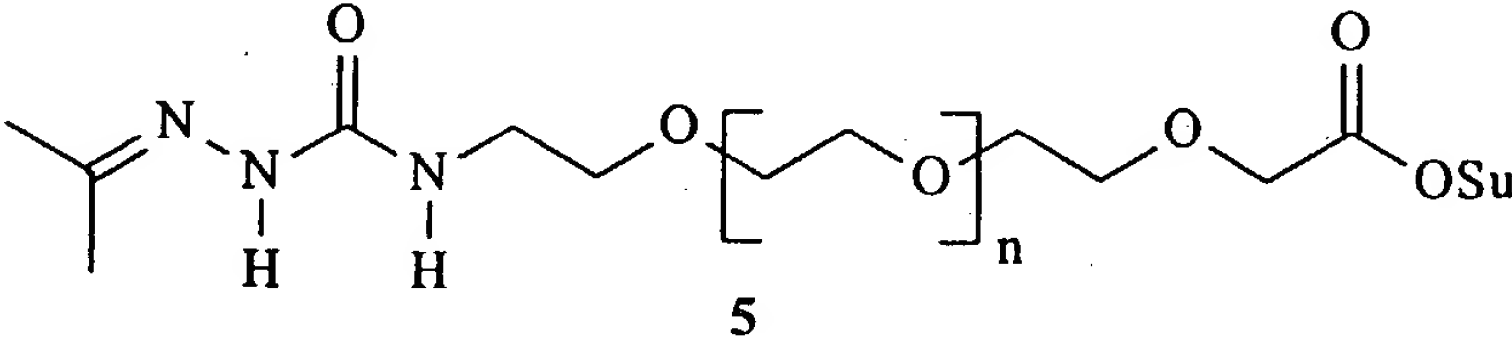
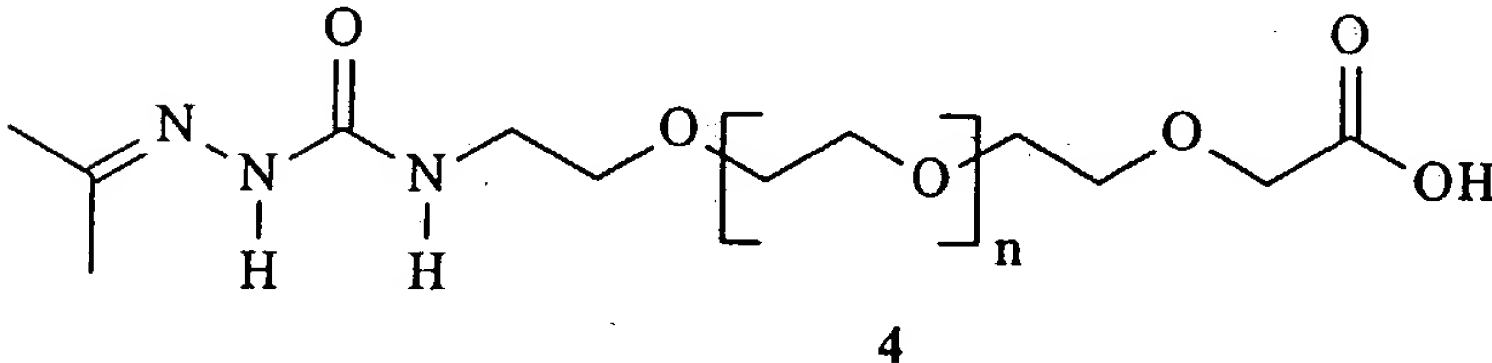
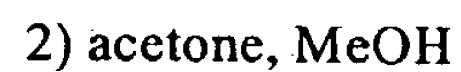
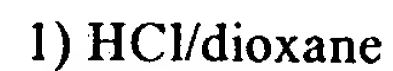
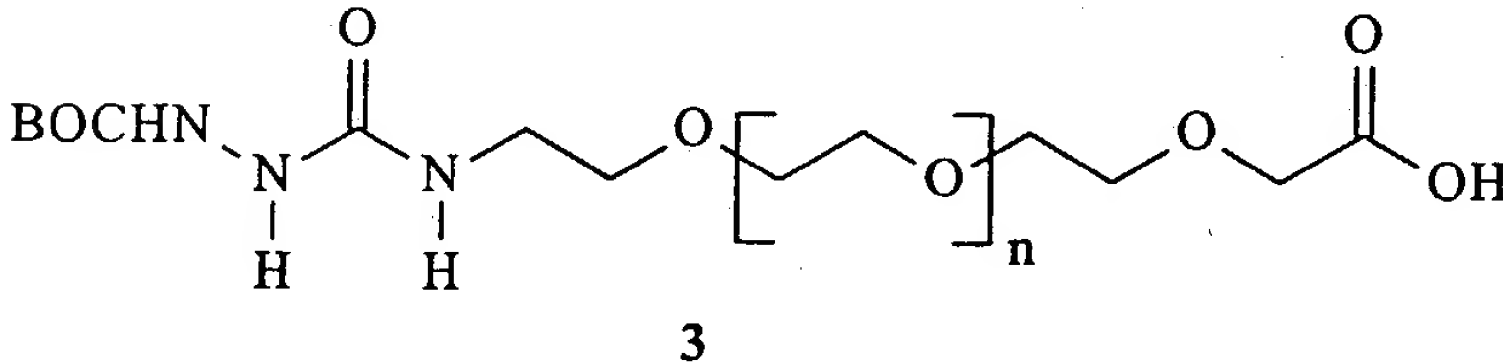
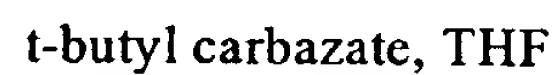
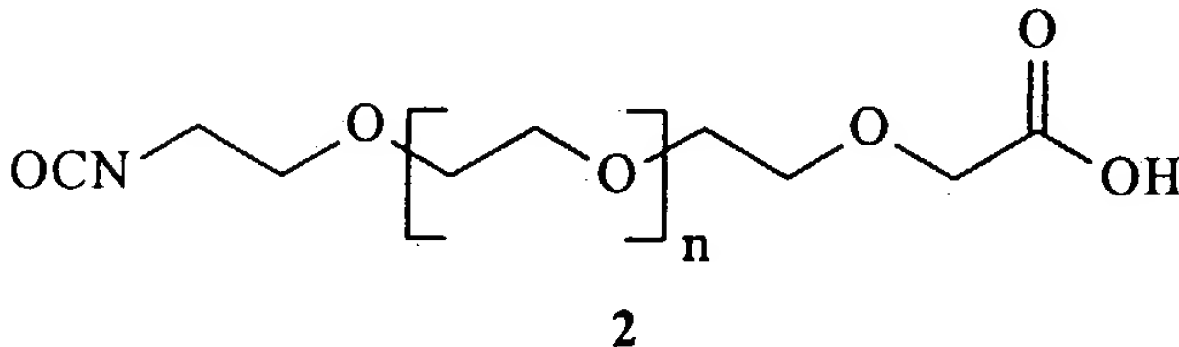
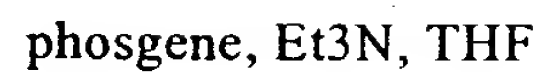
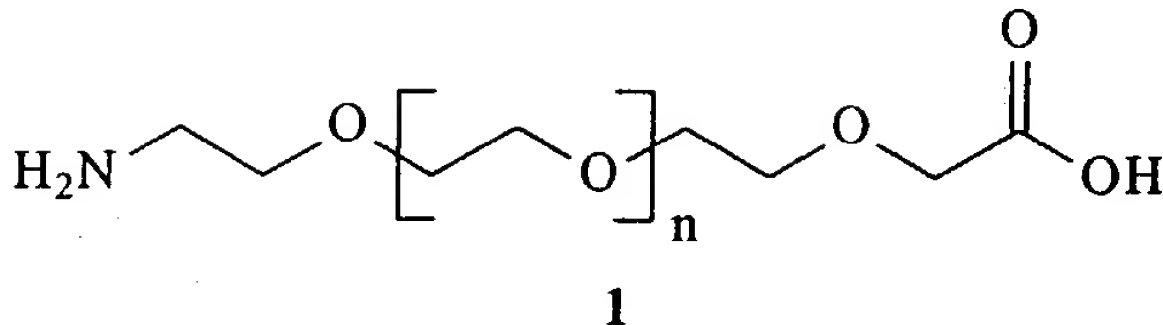


FIGURE 7

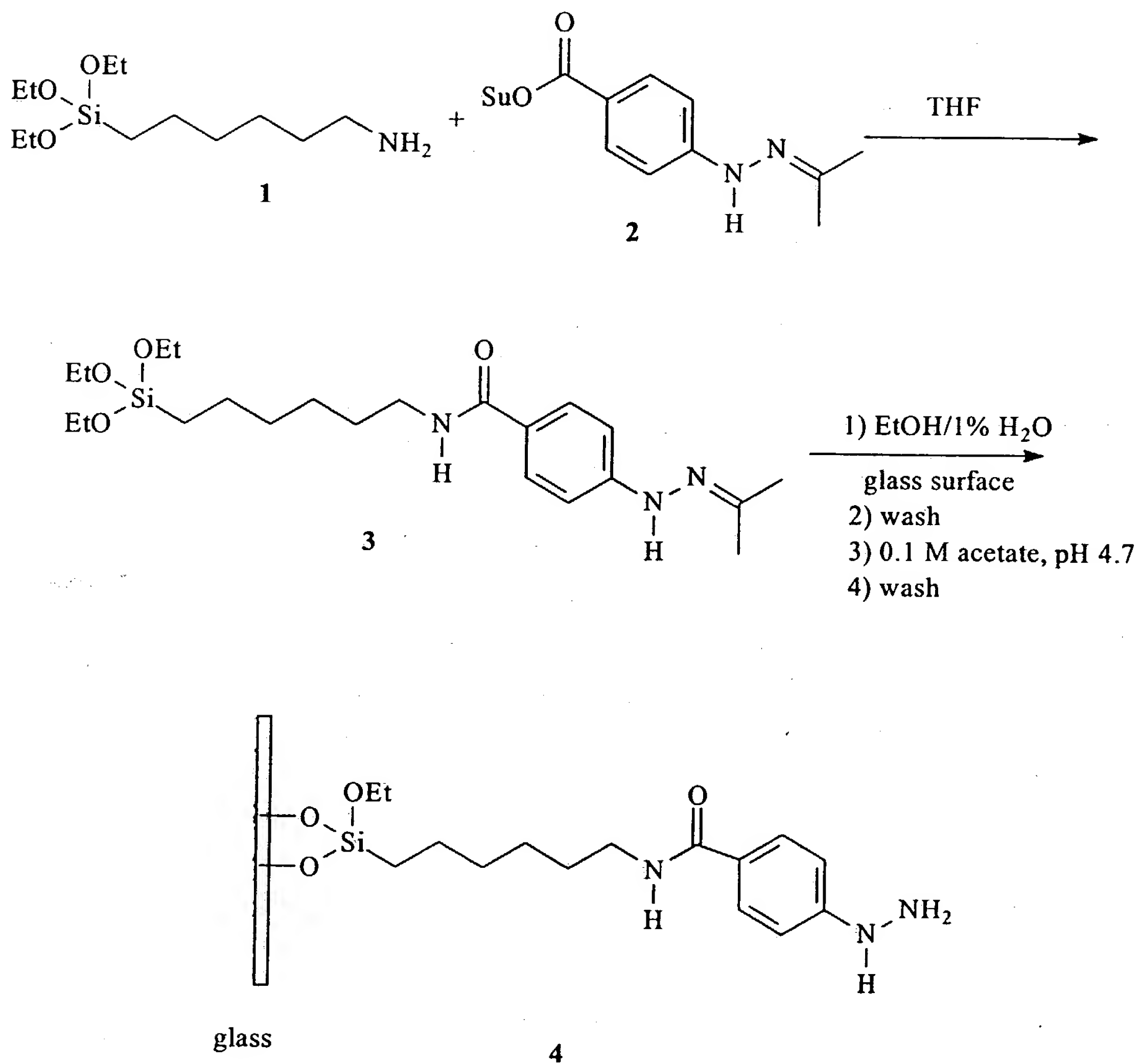


FIGURE 8

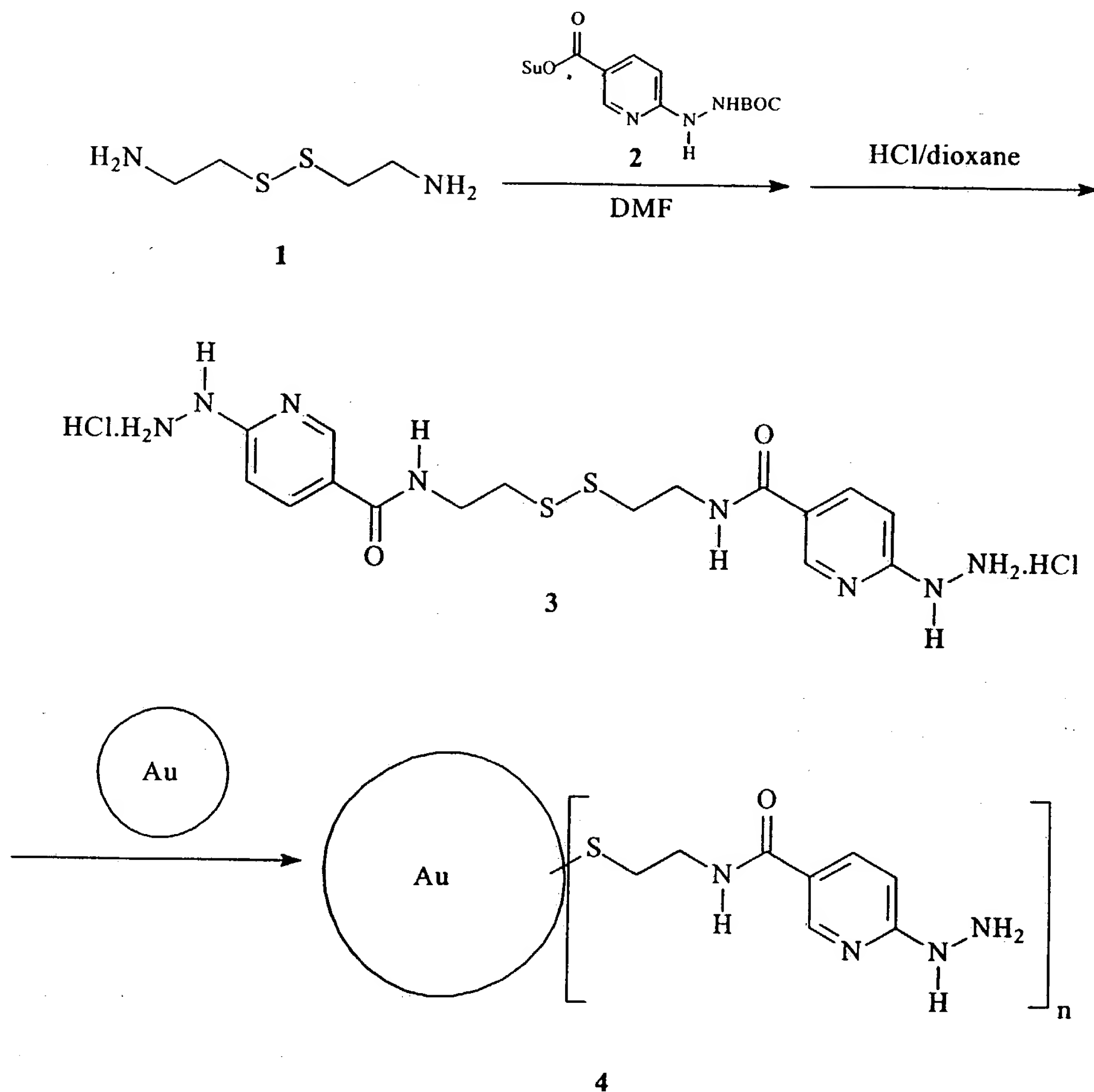


FIGURE 9

